

Claims

1. An ice-breaker, primarily for carrying out offshore shipping of a liquid medium, preferably oil, comprising a hull with vertical through guiding trunks and a deck, characterized in that it is equipped with a diving station installed on the deck and communicating with one of the said vertical through trunks, the said one trunk being intended for lowering and raising a diver, a device for the protection of a flexible hose of an underwater pipeline against ice action, the said device being made in the form of a cylinder provided with guides for moving in another vertical trunk made in the stern side of the hull and installed in its travel position on the afterdeck.
2. The ice-breaker according to Claim 1, characterized in that it is equipped with cargo lowering and lifting mechanisms and a towing device.
3. The ice-breaker according to Claim 1, characterized in that it is equipped with a container, which is installed on the deck and contains oil gathering equipment and fire-fighting means.
4. The ice-breaker according to Claim 1, characterized in that it is equipped with a removable platform, which is installed on the afterdeck and has a container for gathering oil spills and an ecological monitoring laboratory.
5. An ice-breaker, primarily for carrying out offshore shipping of a liquid medium, preferably oil, comprising a hull with a vertical through guiding trunk and a deck, characterized in that it is equipped with a diving station installed on the deck and communicating with the said vertical through trunk being intended for lowering and raising a diver, a device for the protection of a flexible hose of an underwater pipeline against ice action, said device being made in the form of a pontoon having a trunk for servicing of a flexible hose and installed in its travel position on the deck.
6. The ice-breaker according to Claim 5, characterized in that it is equipped with cargo lowering and lifting mechanisms and a towing device.
7. The ice-breaker according to Claim 5, characterized in that it is equipped with a container being installed on the deck and contains oil gathering equipment and fire-fighting means.
8. The ice-breaker according to Claim 5, characterized in that it is equipped with a removable platform, which is installed on the afterdeck and has a container for gathering oil spills and an ecological monitoring laboratory.
9. A method of single-point mooring and servicing of ships, primarily tankers in the ice conditions, according to which a fixed construction secured to the sea bed is used, the said construction being

provided with a device being connected to it with the possibility of turning around the vertical axis and a valve for a liquid medium, primarily oil, a mooring line and a flexible pipeline for transporting a liquid medium into a moored tanker through a cargo-receiving device of the tanker, characterized in that for mooring a tanker and transporting a liquid medium a mooring line and a hose that are made as a single hose-mooring line which bitter end is secured on the fixed construction device, are used, an ice-breaker ensuring offshore shipping of oil is additionally used, the said ice breaker being equipped with a diving station installed on the deck and communicating with a trunk for lowering and raising a diver, who opens the valve for a liquid medium, finds the hose-mooring line and raises it to the tanker after emergency detachment of it from the cargo-receiving device of the tanker in the conditions of close and drifting ice.

10. The method according to Claim 9, characterized in that a weight is attached to and a damper being made, preferably, in the form of a cable and connected on one its end with the device of the fixed construction and on the other end with the said weight, is installed on a section of the hose-mooring line near its bitter end.
11. The method according to Claim 9 or Claim 10, characterized in that a section of the hose-mooring line, which is located between the device of the fixed construction and the weight, is installed outside the area of action of power loads.
12. A system of single-point mooring of ships, primarily tankers in the ice conditions, comprising a fixed construction secured to the sea bed and having a device being connected to it with the possibility of turning around the vertical axis and a valve for a liquid medium, primarily oil, a mooring line and a flexible pipeline for transporting a liquid medium into a moored tanker through a cargo-receiving device of the tanker, characterized in that the mooring line and the hose for transporting a liquid medium are made as a single hose-mooring line which bitter end is secured on the fixed construction device; the system is provided with an ice-breaker ensuring offshore shipping of oil, which has a diving station installed on the deck and communicating with a trunk, arranged in the hull, for lowering and raising a diver, who opens the valve for a liquid medium, finds and raises the hose-mooring line after emergency detachment of it from the cargo-receiving device of the tanker in the conditions of close and drifting ice.
13. The system according to Claim 12, characterized in that it is provided with a weight is attached to the hose-mooring line near its bitter end and a damper being made, preferably, in the form of a cable and connected on one its end to the device of the fixed construction and on the other end to the said weight.

14. The system according to Claim 12 or Claim 13, characterized in that a section of the hose-mooring line, which is located between the device of the fixed construction and the weight, is outside the area of action of power loads.